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L13	l1 and l12	0	L13
L12	5893075.pn.	2	L12
L11	l1 and L10	0	L11
L10	6151601.pn.	2	L10
L9	l1 and L8	0	L9
L8	6167405.pn.	2	L8
L7	l1 and L6	2	L7
L6	6212524.pn.	2	L6
L5	"reverse star schema".ti.ab.	37	L5
L4	"reverse star schema".ti.ab.clm.	6530	L4
L3	l1 and L2	6	L3
L2	"chen, li-wen".in.	11	L2
L1	"star schema" and (datawarehouse or data with warehouse or data with mart)	72	L1

3/6/03 7:20 AM

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Search Results - Record(s) 1 through 10 of 11 returned.

☐ 1. Document ID: US 20020136204 A1

L2: Entry 1 of 11   File: PGPB   Sep 26, 2002

PGPUB-DOCUMENT-NUMBER: 20020136204
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020136204 A1

TITLE: Method and system for routing network traffic based upon application information

PUBLICATION-DATE: September 26, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Chen, Li-wen	Cupertino	CA	US	
Hu, Ron-Chung	Palo Alto	CA	US	

US-CL-CURRENT: 370/352; 370/389

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image |

☐ 2. Document ID: US 20020116389 A1

L2: Entry 2 of 11   File: PGPB   Aug 22, 2002

PGPUB-DOCUMENT-NUMBER: 20020116389
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020116389 A1

TITLE: System and method for providing a data warehouse in accordance with a virtual schema

PUBLICATION-DATE: August 22, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Chen, Li-Wen	Cupertino	CA	US	
Ortiz, Juan J.	Hayward	CA	US	

US-CL-CURRENT: 707/103R

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image |

☐ 3. Document ID: US 20020059183 A1

L2: Entry 3 of 11   File: PGPB   May 16, 2002

PGPUB-DOCUMENT-NUMBER: 20020059183
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020059183 A1

TITLE: Method and system for managing event attributes

PUBLICATION-DATE: May ●●, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Chen, Li-Wen	Cupertino	CA	US	

US-CL-CURRENT: 707/1; 705/8, 705/9, 707/104.1

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | | KWIC | Draw Desc | Image |

☐ 4. Document ID: US 20020038230 A1

L2: Entry 4 of 11   File: PGPB   Mar 28, 2002

PGPUB-DOCUMENT-NUMBER: 20020038230
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020038230 A1

TITLE: User interface and method for analyzing customer behavior based upon event attributes

PUBLICATION-DATE: March 28, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Chen, Li-Wen	Cupertino	CA	US	

US-CL-CURRENT: 705/7

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | | KWIC | Draw Desc | Image |

☐ 5. Document ID: US 6411961 B1

L2: Entry 5 of 11   File: USPT   Jun 25, 2002

US-PAT-NO: 6411961
DOCUMENT-IDENTIFIER: US 6411961 B1

TITLE: Apparatus for providing a reverse star schema data model

DATE-ISSUED: June 25, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Chen; Li-Wen	Cupertino	CA		

US-CL-CURRENT: 707/102; 705/10, 707/104.1

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | | KWIC | Draw Desc | Image |

☐ 6. Document ID: US 6377934 B1

L2: Entry 6 of 11   File: USPT   Apr 23, 2002

US-PAT-NO: 6377934
DOCUMENT-IDENTIFIER: US 6377934 B1

TITLE: Method for providing a reverse star schema data model

DATE-ISSUED: April 23, 2002

INVENTOR-INFORMATION:
NAME	CITY	STATE	ZIP CODE	COUNTRY
Chen; Li-Wen	Cupertino	CA		
Ortiz; Juan J.	Hayward	CA		

US-CL-CURRENT: <u>705/10</u>; <u>707/102</u>, <u>707/104.1</u>

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | | KWIC | Draw Desc | Image |

☐ 7. Document ID: US 6363353 B1

L2: Entry 7 of 11

File: USPT

Mar 26, 2002

US-PAT-NO: 6363353
DOCUMENT-IDENTIFIER: US 6363353 B1

TITLE: System for providing a reverse star schema data model

DATE-ISSUED: March 26, 2002

INVENTOR-INFORMATION:
NAME	CITY	STATE	ZIP CODE	COUNTRY
Chen; Li-Wen	Cupertino	CA		

US-CL-CURRENT: <u>705/10</u>; <u>707/102</u>, <u>707/104.1</u>

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | | KWIC | Draw Desc | Image |

☐ 8. Document ID: JP 08328838 A

L2: Entry 8 of 11

File: JPAB

Dec 13, 1996

PUB-NO: JP408328838A
DOCUMENT-IDENTIFIER: JP 08328838 A
TITLE: SYSTEM AND METHOD FOR DISCRIMINATING TYPE OF PLURALITY OF OBJECT INTERFACES IN DISTRIBUTED OBJECT ENVIRONMENT

PUBN-DATE: December 13, 1996

INVENTOR-INFORMATION:
NAME	COUNTRY
KESSLER, PETER B	
LIM, SWEE BOON	
VANDERBILT, PETER	
POWELL, MICHAEL L	
CHEN, LI-WEN	
HARE, DWIGHT F	
SNYDER, ALAN	

INT-CL (IPC): <u>G06</u> <u>F</u> <u>9/06</u>; <u>G06</u> <u>F</u> <u>9/44</u>

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | | KWIC | Draw Desc | Clip Img | Image |

☐ 9. Document ID: WO 2082209 A2

L2: Entry 9 of 11

File: EPAB

Oct 17, 2002

3/6/03 7:15 AM

PUB-NO: WO002082209A2
DOCUMENT-IDENTIFIER: WO 2082209 A2
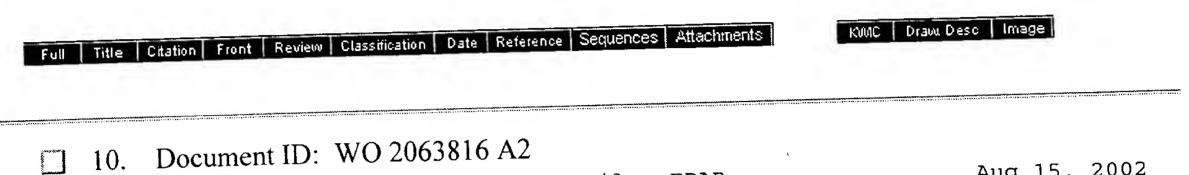TITLE: METHOD AND SYSTEM FOR DECISION SUPPORT ANALYSIS

PUBN-DATE: October 17, 2002

INVENTOR-INFORMATION:
NAME   COUNTRY
CHEN, LI-WEN
SHENG, ROUNDA

INT-CL (IPC): G06 F 0/

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | | KWIC | Draw Desc | Image |

☐ 10.   Document ID: WO 2063816 A2

L2: Entry 10 of 11   File: EPAB   Aug 15, 2002

PUB-NO: WO002063816A2
DOCUMENT-IDENTIFIER: WO 2063816 A2
TITLE: METHOD AND SYSTEM FOR ROUTING NETWORK TRAFFIC BASED UPON APPLICATION
INFORMATION

PUBN-DATE: August 15, 2002

INVENTOR-INFORMATION:
NAME   COUNTRY
CHEN, LI-WEN

INT-CL (IPC): H04 L 0/

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | | KWIC | Draw Desc | Image |

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"chen, li-wen".in.	11

Display Format: [-]   Change Format

Previous Page   Next Page

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L7: Entry 1 of 2   File: USPT   Apr 3, 2001

US-PAT-NO: 6212524
DOCUMENT-IDENTIFIER: US 6212524 B1

TITLE: Method and apparatus for creating and populating a datamart

DATE-ISSUED: April 3, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Weissman; Craig David	Belmont	CA		
Walsh; Gregory Vincent	Cupertino	CA		
Slater, Jr.; Lynn Randolph	Fremont	CA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
E.piphany, Inc.	San Mateo	CA			02

APPL-NO: 09/ 073752   [PALM]
DATE FILED: May 6, 1998

PARENT-CASE:
CROSS REFERENCES TO RELATED APPLICATIONS This application relates to the following group of applications. Each application in the group relates to, and incorporates by reference, each other application in the group. The invention of each application is assigned to the assignee of this invention. The group of applications includes the following. U.S. patent application Ser. No. 09/385,119, entitled "Method and Apparatus for Creating a Well-Formed Database System Using a Computer," filed Aug. 27, 1999, and having inventors Craig David Weissman, Greg Vincent Walsh and Eliot Leonard Wegbreit. U.S. patent application Ser. No. 09/073,752, entitled "Method and Apparatus for Creating and Populating a Datamart," filed May 6, 1998, and having inventors Craig David Weissman, Greg Vincent Walsh and Lynn Randolph Slater, Jr. U.S. patent application Ser. No. 09/073,733, entitled "Method and Apparatus for Creating Aggregates for Use in a Datamart," filed May 6, 1998, and having inventors Allon Rauer, Gregory Vincent Walsh, John P. McCaskey, Craig David Weissman and Jeremy A. Rassen. U.S. patent application Ser. No. 09/073,753, entitled "Method and Apparatus for Creating a Datamart and for Creating a Query Structure for the Datamart," filed May 6, 1998, and having inventors Jeremy A. Rassen, Emile Litvak, abhi a. shelat, John P. McCaskey and Allon Rauer.

INT-CL: [07] G06 F 17/30

US-CL-ISSUED: 707/101; 707/3
US-CL-CURRENT: 707/101; 707/3

FIELD-OF-SEARCH: 707/1-10, 707/100-104, 707/200-206

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

| Search Selected | Search ALL |

	PAT-NO	ISSUE DATE	PATENTEE-NAME	US-CL
☐	5386556	January 1995	Hedin et al.	707/4
☐	5550971	August 1996	Brunner et al.	707/3
☐	5659724	August 1997	Borgida et al.	707/3
☐	5675785	October 1997	Hall et al.	707/102
☐	5806060	September 1998	Borgida et al.	707/3
☐	5995958	November 1999	Xu	707/3

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Zhuge, Y. et al., "Consistency Algorithms for Multi-Source Warehouse View Maintenance", Distributed and Parallel Databaes, vol. 6, pp. 7-40 (1998), Kluwer Academic Publishers.

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Quass, D., "Maintenance Expressions for Views with Aggregation", Proceedings of the 21st International Conference on Very Large Data Bases, IEEE, Zurich, Switzerland, (Sep. 1995), 9 pages.

Mumick, I. et al., "Maintenance of Data Cubes and Summary Tables in a Warehouse", Proceedings of the 1997 ACM SIGMOD International Conference, ACM Press, 1997, pp. 100-111.

Huyn, N., "Multiple-View Self-Maintenance in Data Warehousing Environments", Proceedings of the 23rd International Conference on Very Large Data Bases, IEEE, (1997), pp. 26-35.

Quass, D. et al., "Making Views Self-Maintainable for Data Warehousing", Proceedings of the Fourth International Conference on Parallel and Distributed Information Systems, IEEE, Dec. 1996, pp. 158-169.

Quass, D. et al., "On-Line Warehouse View Maintenance", Proceedings of the 1997 ACM SIGMOD International Conference, ACM Press, 1997, pp. 393-404.

Gupta, H., "Selection of Views to Materialize in a Data Warehouse", Database Theory--ICDT '97 , Proceedings of the 6th International Conference, Delphi, Greece, Jan. 1997, pp. 98-112.

Harinarayan, V. et al., "Implementing Data Cubes Efficiently", SIGMOD Record, vol. 25, No. 2, Jun. 1996, pp. 205-216.

Gupta, H. et al., "Index Selection for OLAP", IEEE Paper No. 1063-6382/97, IEEE (1997), pp. 208-219.

Labio, W. et al., "Physical Database Design for Data Warehouses", IEEE Paper No. 1063-6382/97, IEEE (1997), pp. 277-288.

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"Multiple Selection List Presentation Aids Complex Search", IBM Technical Disclosure Bulletin, vol. 36, No. 10, Oct. 1993, pp. 317-318.

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ART-UNIT: 271

PRIMARY-EXAMINER: Ho; Ruay Lian

ABSTRACT:

A method of generating a datamart is described. The datamart includes tables having rows and columns. The method comprises accessing a description of a schema. The schema defines the relationships between the tables and columns. The description further defines how data is to be manipulated and used to populate the tables in the datamart. That is, the description defines the semantic meaning of the data. The description is further used to create a set of commands to create the tables. The commands are executed causing the creation of the tables. Importantly, when the semantic meaning is associated with the column and rows, programs for manipulating and propagating data into those columns and rows are automatically defined. Previously, consultants would have to hand code the creation, manipulation, and population programs for a datamart. Thus, the amount of work required to create and populate the datamart is significantly reduced.

21 Claims, 48 Drawing figures

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L3: Entry 4 of 6   File: USPT   Jun 25, 2002

US-PAT-NO: 6411961
DOCUMENT-IDENTIFIER: US 6411961 B1

TITLE: Apparatus for providing a reverse star schema data model

DATE-ISSUED: June 25, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Chen; Li-Wen	Cupertino	CA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
MetaEdge Corporation	Sunnyvale	CA			02

APPL-NO: 09/ 306650   [PALM]
DATE FILED: May 6, 1999

PARENT-CASE:
CROSS-REFERENCES TO RELATED APPLICATIONS This application claims priority from the
following U.S. Provisional Patent Application, the disclosure of which, including
all appendices and all attached documents, is incorporated by reference in its
entirety for all purposes: U.S. Provisional Patent Application Ser. No. 60/116,086,
Li-Wen Chen entitled, "METHOD AND APPARATUS FOR PERFORMING CUSTOMER DATA ANALYSIS OF
A COMPUTER DATABASE USING REVERSE STAR SCHEMA DATA MODEL," filed Jan. 15, 1999. The
following commonly-owned co-pending applications, including this one, are being
filed concurrently and the others are hereby incorporated by reference in their
entirety for all purposes: 1. U.S. patent application Ser. No. 09/306,677, Li-Wen
Chen and Juan Oritz entitled, "METHOD FOR PROVIDING A REVERSE STAR SCHEMA DATA
MODEL"; 2. U.S. patent application Ser. No. 09/306,650, Li-Wen Chen entitled,
"APPARATUS FOR PROVIDING A REVERSE STAR SCHEMA DATA MODEL"; and 3. U.S. patent
application Ser. No. 09/306,693, Li-Wen Chen entitled, "SYSTEM FOR PROVIDING A
REVERSE STAR SCHEMA DATA MODEL".

INT-CL: [07] G06 F 17/60

US-CL-ISSUED: 707/102; 707/104.1, 705/10
US-CL-CURRENT: 707/102; 705/10, 707/104.1

FIELD-OF-SEARCH: 705/10, 707/3, 707/5, 707/10, 707/103, 707/201, 707/100-104, 717/1

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

| Search Selected | | Search ALL |

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐ 4972504	November 1990	Daniel, Jr. et al.	
☐ 5036314	July 1991	Barillari et al.	
☐ 5168445	December 1992	Kawashima et al.	
☐ 5191522	March 1993	Bosco et al.	364/401
☐ 5299115	March 1994	Fields et al.	
☐ 5615109	March 1997	Eder	
☐ 5644723	July 1997	Deaton et al.	
☐ 5715450	February 1998	Ambrose et al.	
☐ 5721903	February 1998	Anand et al.	395/605
☐ 5758355	May 1998	Buchanan	
☐ 5787437	July 1998	Potterveld et al.	707/103
☐ 5794246	August 1998	Sankaran et al.	
☐ 5854746	December 1998	Yamamoto et al.	
☐ 5873096	February 1999	Lim et al.	
☐ 5893075	April 1999	Plainfield et al.	
☐ 6151601	November 2000	Papierniak et al.	707/10
☐ 6167405	December 2000	Rosensteel, Jr. et al.	707/102
☐ 6212524	April 2001	Weissman et al.	707/101

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FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
WO-200057311	February 2001	WO	

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Gopalkrishnan et al. Star/Snow-flake Schema Driven Object-Relationship Data Warehouse Design and Query Processing Strategy. star schema conversion to object-relational warehouse.*
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ART-UNIT: 2163

PRIMARY-EXAMINER: Hafiz; Tariq R.

ASSISTANT-EXAMINER: Robertson; D.

ABSTRACT:

According to the invention, techniques for organizing information from systems in a data warehousing environment are provided. In a particular embodiment, the invention provides an apparatus for analyzing data in at least data source of an enterprise. The apparatus can include a meta model for an enterprise. The enterprise is typically a business activity, but can also be other loci of human activity. A data schema derived from the meta model can also be part of the apparatus. The apparatus can also include a database organized according to the data schema. The apparatus can translate data from a variety of sources to the data schema. The apparatus can incorporate data into the database and perform a variety of analyses on the data in the database.

3/6/03 7:11 AM

10 Claims, 16 Drawing Figures